

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**NT1901PCT**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/JP2005/000690**

International filing date (day/month/year)

**20.01.2005**

Priority date (day/month/year)

**23.01.2004**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**HITACHI PLANT ENGINEERING & CONSTRUCTION CO., LTD.**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

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For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/000690

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language  
\_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/000690

Box No. IV Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☒ paid additional fees
  - ☐ paid additional fees under protest
  - ☐ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with
  - ☒ not complied with for the following reasons:

A part of the inventions of claims 1-6 and the inventions of claims 11 and 12 (invention group A) relates to a microorganism separating device comprising sample liquid separating means for stopping the supply of a sample liquid to a first flow passage based on the result of detection of a microorganism by a microorganism sensor and then discharging said detected microorganism from the end side of said first flow passage together with the sample liquid. A part of the inventions of claims 7-10 and the inventions of claims 11 and 12 (invention group B) relates a microorganism separating device, wherein a first flow passage and a second flow passage are connected through an orifice, and the passage of a microorganism through an orifice can be detected by a pair of electrodes placed in a first flow passage and a second flow passage, respectively.

The matter common in the invention group A and the invention group B relates to a microorganism separating device having sample supplying means, a first flow passage and a sensor capable of detecting a microorganism. However, the matter was well known before the date of priority of this application as described in JP, 9-145593, A, and therefore this common matter is not a special technical feature in the sense of the second paragraph of PCT Rule 13.2.

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- ☒ all parts
  - ☐ the parts relating to claims Nos. \_\_\_\_\_

WRITTEN OPINION OF THE  
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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
<b>1. Statement</b>			
Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims	1-6, 11, 12	YES
	Claims	7-10	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO
<b>2. Citations and explanations:</b>			
<p>Document 1: JP, 11-281564, A (Sysmex Corporation), 15 October, 1999 (15.10.99), full text (Family: none)</p> <p>Document 2: JP, 2001-305041, A (Sysmex Corporation), 31 October, 2001 (31.10.01), full text, &amp; US, 2001/0032495, A1</p> <p>Document 3: JP, 9-145593, A (Nikon Corporation), 6 June, 1997 (06.06.97), full text (Family: none)</p> <p>Document 4: JP, 2000-74816, A (Nireco Corporation), 14 March, 2000 (14.03.00), full text (Family: none)</p> <p>Document 5: JP, 2003-284544, A (Aisin Seiki Co., Ltd.), 7 October, 2003 (07.10.03), full text (Family: none)</p> <p>Document 6: JP, 2003-274924, A (Jun Kikuchi), 30 September, 2003 (30.09.03), full text (Family: none)</p> <p>Document 7: A.Y. Fu et al., An integrated microfabricated cell sorter, Anal. Chem., 2002, Vol. 74, pages 2451-2457</p> <p>Document 8: A.Y. Fu et al., A microfabricated fluorescence-activated cell sorter, Nat. Biotechnol., 1999, Vol. 17, pages 1109-1111</p> <p>The subject matters of claims 7-10 do not appear to involve an inventive step in view of documents 1-8 cited in the ISR.</p> <p>Documents 1 and 2 are considered to describe a microorganism detecting device detecting the passage of a microorganism through an orifice using an electrode. Documents 3-8 are considered to describe a device separating microorganisms using various kinds of signals.</p> <p>Accordingly, a person skilled in the art could have easily conceived that a device separating microorganisms by detecting the passage of a microorganism through an orifice using an electrode is produced referring to the descriptions of documents 1-8. At this time, a person skilled in the art could have accordingly made a discharge port and the like suitable and made the positional relation between the electrode and the orifice suitable.</p> <p>The subject matters of claims 7-10 are not considered to exhibit a remarkable effect.</p> <p>The subject matters of claims 1-6, 11 and 12 are neither described in any of the documents cited in the ISR nor obvious to a person skilled in the art.</p>			

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1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
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\_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
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☐ contained in the international application as filed.  
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3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☒ paid additional fees
  - ☐ paid additional fees under protest
  - ☐ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with
  - ☒ not complied with for the following reasons:

A part of the inventions of claims 1-6 and the inventions of claims 11 and 12 (invention group A) relates to a microorganism separating device comprising sample liquid separating means for stopping the supply of a sample liquid to a first flow passage based on the result of detection of a microorganism by a microorganism sensor and then discharging said detected microorganism from the end side of said first flow passage together with the sample liquid. A part of the inventions of claims 7-10 and the inventions of claims 11 and 12 (invention group B) relates a microorganism separating device, wherein a first flow passage and a second flow passage are connected through an orifice, and the passage of a microorganism through an orifice can be detected by a pair of electrodes placed in a first flow passage and a second flow passage, respectively.

The matter common in the invention group A and the invention group B relates to a microorganism separating device having sample supplying means, a first flow passage and a sensor capable of detecting a microorganism. However, the matter was well known before the date of priority of this application as described in JP, 9-145593, A, and therefore this common matter is not a special technical feature in the sense of the second paragraph of PCT Rule 13.2.

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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
<b>1. Statement</b>			
Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims	1-6, 11, 12	YES
	Claims	7-10	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO
<b>2. Citations and explanations:</b>			
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Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

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INTERNATIONAL SEARCHING AUTHORITY

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Box No. I

Basis of this opinion

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Box No. IV Lack of unity of invention

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- ☐ complied with
  - ☒ not complied with for the following reasons:

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The matter common in the invention group A and the invention group B relates to a microorganism separating device having sample supplying means, a first flow passage and a sensor capable of detecting a microorganism. However, the matter was well known before the date of priority of this application as described in JP, 9-145593, A, and therefore this common matter is not a special technical feature in the sense of the second paragraph of PCT Rule 13.2.

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International application No.  
**PCT/JP2005/000690**

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
<b>1. Statement</b>			
Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims	1-6, 11, 12	YES
	Claims	7-10	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO
<b>2. Citations and explanations:</b>			
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